

REMARKS

Favorable reconsideration of this application is respectfully requested in light of the following remarks, wherein Claims 1-4, 6-7, 9-11, 17-18, 21-24, 26 and 33 are amended. Currently, Claims 1-33 are pending in the present matter.

Claims 1-33 stand rejected under 35 U.S.C. §112, second paragraph, for containing various informalities. As a result, the claims are amended to remove these informalities. Accordingly, withdrawal of the rejections based upon 35 U.S.C. §112, second paragraph, is respectfully requested.

Claims 1-6, 12, 18, 27 and 33 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,102,408 to *Ludvigson*. Claims 7-11 and 22-26 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Ludvigson*, in view of U.S. Patent No. 7,032,684 to *Muuttonen*. Claims 15 and 30 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Ludvigson* in view of U.S. Patent No. 7,252,154 to *Keskiniva et al.*

Independent Claim 1 defines a pressure fluid operated impact device comprising a frame whereto a tool is mountable movably in its longitudinal direction, control means for controlling pressure fluid feed by the impact device, and means for generating a stress impulse in the tool by the pressure of a pressure fluid, wherein the impact device comprises a working chamber entirely filled with pressure fluid and, in the working chamber, a transmission piston movably mounted in the longitudinal direction of the tool with respect to the frame, an end of the transmission piston facing the tool coming into contact with the tool either directly or indirectly at least during the generation of the stress pulse, the transmission piston, in its axial direction with respect to the tool on the opposite side thereof, being provided with a pressure surface located towards the working chamber, the impact device comprises energy charging means for charging energy of the pressure fluid to be fed to the

impact device necessary for generating the stress pulse, and in that the control means are configured to allow periodically and alternately a pressure fluid having a pressure higher than the pressure of the pressure fluid present in the working chamber to flow to the working chamber, thus causing a sudden increase in the pressure in the working chamber and, consequently, a force pushing the transmission piston in the direction of the tool, compressing the tool in the longitudinal direction and thus generating a stress pulse in the tool, the generation of the stress pulse ending substantially at the same time as the influence of the force on the tool ends, and, correspondingly, to discharge pressure fluid from the working chamber in order to enable the transmission piston to return to its substantially original position.

Ludvigson discloses a pile driving device in which a normal striking piston 13 reciprocates up and down while striking a pile at the end of the down movement. The piston 13 only contacts the pile when it strikes the pile. The stress pulse which drives the pile is created by the stroke of the piston not by compressing it without the strike. Also, *Ludvigson* is silent about that the stress pulse will end substantially at the same time as the force acting on the tool. When using a striking piston the length of the stress pulse is approximately twice the length of the piston, and is not related to the time the force acts on the pile in *Ludvigson*. Accordingly, *Ludvigson* fails to disclose the patentable features of independent Claim 1.

Muutonen does not make up that which is missing from *Ludvigson*. *Muutonen* discloses a damping construction which is used in combination with a striking piston. As can be seen in Figs. 1-4, there is a shank 15 which is supported by damping pistons 18/18a, 18b. This does not create a stress pulse to the tool but the stress pulse is created by piston 14 which strikes the shank during the striking operation of the rock drill. As such, *Ludvigson* is not properly combinable with *Muutonen*.

For at least the foregoing reasons, it is submitted that the device of independent Claim 1, and the claims depending therefrom, are patentably distinguishable over the applied documents. Accordingly, withdrawal of the rejections of record and allowance of this application are earnestly solicited.

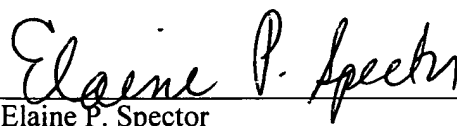
Should any questions arise in connection with this application, or should the Examiner believe a telephone conference would be helpful in resolving any remaining issues pertaining to this application, it is respectfully requested that the undersigned be contacted at the number indicated below.

EXCEPT for issue fees payable under 37 C.F.R. § 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. §§ 1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account 50-0573. This paragraph is intended to be a CONSTRUCTIVE PETITION FOR EXTENSION OF TIME in accordance with 37 C.F.R. § 1.136(a)(3).

Respectfully Submitted,

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